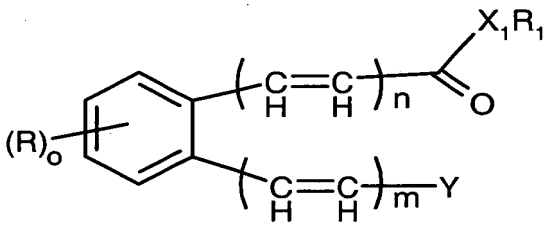
CLAIMS:

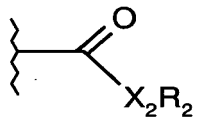
1. A compound of formula (I)



(I)

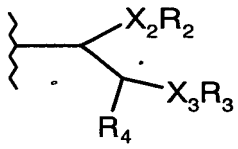
in which:

Y is a group of formula (II)



(II)

or of formula (III)



(III),

R is

H, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl or C_5-C_{14}-aryl, halogen, -CN, -OH, -O-C_1-C_6-alkyl, -O-C_2-C_6-alkenyl, -O-C_5-C_{14}-aryl, -O-C_2-C_6-alkynyl, $-NH_2$, -NH-C_2-C_6-alkyl, -NH-C_2-C_6-alkenyl, -NH-C_2-C_6-alkynyl, -NH-C_5-C_{14}-aryl, -N(-C_1-C_6-alkyl)$_2$, -N(-C_2-C_6-alkenyl)$_2$, -N(-C_2-C_6-alkynyl)$_2$, -N(C_5-C_{14}-aryl)$_2$, -NH[-C(=O)-(C_1-C_6-alkyl)], -NH[-C(=O)-(C_5-C_{14}-aryl)], -NH-O-R_1, -SH, -S-C_1-C_6-alkyl, -S-C_2-C_6-alkenyl, -S-C_1-C_6-alkynyl or -O-C_5-C_{14}-aryl, wherein the abovementioned substituents are unsubstituted or substituted, one or more times, by a substituent independently selected from C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl, C_5-C_{14}-aryl, where alkyl, alkenyl, alkynyl and aryl may be independently unsubstituted or substituted, once or twice, by a substituent independently selected from –OH, =O, –O-C_1-C_6-alkyl, –O-C_2-C_6-alkenyl, –O-C_5-C_{14}-aryl, –C_5-C_{14}-aryl, –NH-C_1-C_6-alkyl, –NH-C_2-C_6-alkenyl,

$-NH_2$, and halogen, wherein alkyl, alkenyl, alkynyl and aryl can be further substituted by a -CN, amide or oxime,

R_1, R_2, R_3 and R_4 are, independently of each other,
H, C_1-C_6-alkyl, C_2-C_6-alkenyl, C_2-C_6-alkynyl or C_5-C_{14}-aryl,
in which alkyl, alkenyl, alkynyl and aryl are unsubstituted or substituted, once or twice, by a substituent independently selected from –OH, –O-C_1-C_6-alkyl, –O-C_2-C_6-alkenyl, –O-C_5-C_{14}-aryl, –C_5-C_{14}-aryl, –NH-C_1-C_6-alkyl, –NH-C_2-C_6-alkenyl, $-NH_2$ and halogen, in which alkyl, alkenyl, alkynyl and aryl are independently unsubstituted or substituted, once or twice, by a substituent independently selected from –OH, =O, –O-C_1-C_6-alkyl, –O-C_2-C_6-alkenyl, –O-C_5-C_{14}-aryl, –C_5-C_{14}-aryl, –NH-C_1-C_6-alkyl, –NH-C_2-C_6-alkenyl, $-NH_2$ and halogen, in which said alkyl, alkenyl, alkynyl and aryl can be further independently substituted by a -CN, amide or oxime,

X_1, X_2 and X_3 are, independently of each other, selected from
$–CH_2–$, –CHR–, –NH–, –N(C_1-C_6-alkyl)–, –N(C_2-C_6-alkenyl)–, –N(C_2-C_6-alkynyl)–, –N[-C(=O)-(C_1-C_6-alkyl)]–, –N[-C(=O)-(C_5-C_{14}-aryl)]–, –N(C_5-C_{14}-aryl)–, –N(O-R)–, –O– and –S–,

n and m are, independently of each other,
2, 3, 4 or 5, and

o is
0, 1, 2 or 3,

excluding, however, compounds of formula (I) in which
o is 0,
n is 2,
m is 2 or 3,
X_2 and X_3 are O, and
R_2 and R_3 are C_2H_5,
and all double bonds possess the trans-configuration,

and/or stereoisomeric forms of compounds of formula (I) and/or a mixture of these forms in any ratio, and/or physiologically tolerated salts of compounds of formula (I).

2. A compound of formula (I) as claimed in claim 1, wherein at least one polyene group contains at least one *cis* double bond.

3. A compound of formula (I) as claimed in claim 1, wherein

R is H,

R_1 is H or C_1-C_6-alkyl,

R_2 is H or C_1-C_6-alkyl,

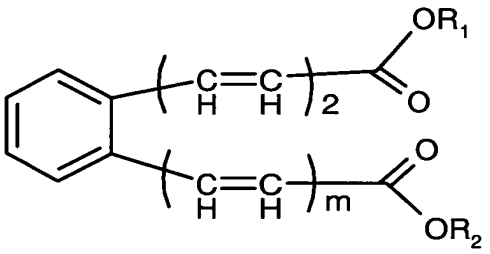
R_3 is H or C_1-C_6-alkyl,

R_4 is C_1-C_6-alkyl, and

X_1 and X_2 are -O-,

and the physiologically tolerated salts thereof.

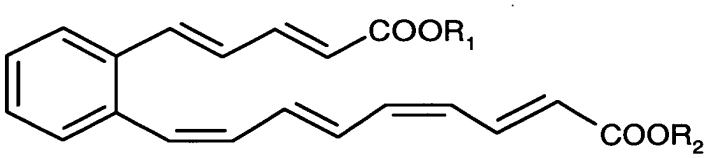
4. A compound of formula (I) as claimed in claim 1, which is a compound of formula (IV)



(IV)

wherein m is 3 or 4, and R_1 and R_2 are as defined in claim 1 and the physiologically tolerated salts thereof.

5. A compound of formula (I) as claimed in claim 1, which is a compound of formula (V)

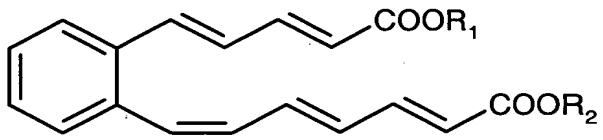


(V)

wherein R1 and R2 are as defined in claim 1.

6. A compound of formula (V) as claimed in claim 5, wherein each of R_1 and R_2 is H.

7. A compound of formula (I) as claimed in claim 1, which is a compound of formula (VI)

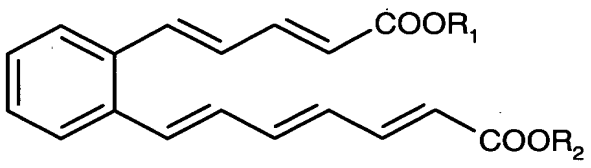


(VI)

wherein R1 and R2 are as defined in claim 1.

8. A compound of formula (VI) as claimed in claim 7, wherein R_1 and R_2 are each H.

9. A compound of formula (I) as claimed in claim1, which is a compound of formula (VII)

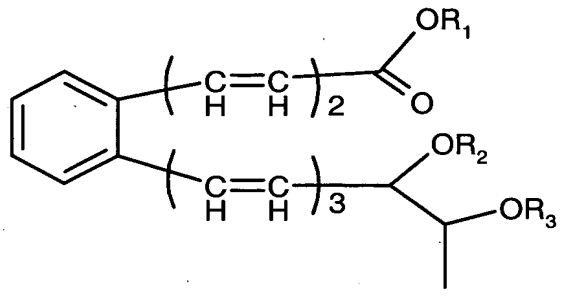


(VII)

wherein R1 and R2 are as defined in claim 1.

10. A compound of formula (VII) as claimed in claim 9, wherein R_1 and R_2 are each H.

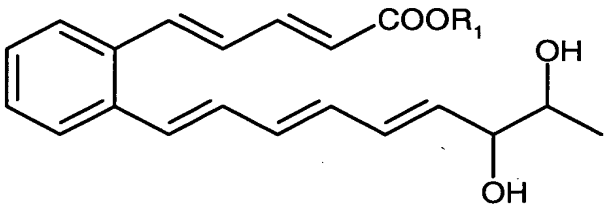
11. A compound of formula (I) as claimed in claim 1, which is a compound of formula (VIII)



(VIII)

wherein R1 and R2 are as defined in claim 1.

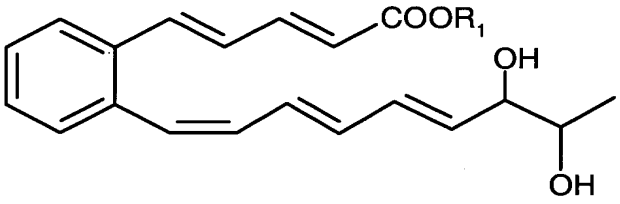
12. A compound of formula (VIII) as claimed in claim 11, which is a compound of formula (IX)



(IX).

13. A compound of formula (IX) as claimed in claim 12, wherein R_1 is H.

14. A compound of the formula (VIII) as claimed in claim 11, which is a compound of formula (X)



(X).

15. A compound of formula (X) as claimed in claim 14, wherein R_1 is H.

16. A process for preparing a compound of formula (I) as claimed in claim 1, which comprises

1. culturing the microorganism *Actinomycetales* sp. DSM 14865, or one of its variants and/or mutants, in an aqueous nutrient medium until one or more of the compounds serpentemycin A, B, C and D accrues in the culture broth,
2. isolating and purifying said serpentemycin A, B, C and/or D,
3. where appropriate, using a suitable reagent to convert said serpentemycin A, B, C or D into another compound of formula (I),
4. and, where appropriate, converting said compound of formula (I) into a pharmacologically tolerated salt.

17. The process as claimed in claim 16, wherein the suitable reagent is an alkylating agent.

18. A process as claimed in claim16, which comprises fermenting the microorganism *Actinomycetales* sp. DSM 14865, or one of its variants and/or mutants, in a culture medium which contains a carbon and nitrogen source and also the customary inorganic salts and trace elements, isolating serpentemycins A, B, C and/or D and, where appropriate, converting said serpentemycins A, B, C and/or D into a pharmacologically tolerated salt.

19. A process as claimed in claim 16, wherein the fermentation is carried out under aerobic conditions at a temperature of between 20 and 35°C and at a pH between 4 and 10.

20. A method for the treatment and/or prophylaxis of an infectious bacterial disease comprising administering to a patient in need thereof an antibacterially effective amount of a compound of claim 1.

21. A pharmaceutical composition for the treatment and/or prophylaxis of infectious bacterial diseases comprising at least one compound as claimed in claim 1 and one or more physiologically suitable auxiliary substances.

22. A process for producing a pharmaceutical composition as claimed in claim 21, which comprises combining at least one compound as claimed inclaim 1, with one or more physiologically suitable auxiliary substances, into a suitable form for administration.

23. The microorganism *Actinomycetales* sp., DSM 14865.